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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,037	09/25/2003	Alan J. Weger	YOR920020321US1 (16016)	6708
7590 02/04/2005 Steven Fischman, Scully, Scott, Murphy & Presser 400 Garden City Plaza Garden City, NY 11530			EXAMINER SUN, XIUQIN	
			ART UNIT 2863	PAPER NUMBER

DATE MAILED: 02/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/671,037	<b>Applicant(s)</b> WEGER, ALAN J.	
	<b>Examiner</b> Xiuqin Sun	<b>Art Unit</b> 2863	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 September 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,8,9,12 and 13 is/are rejected.
- 7) ☒ Claim(s) 3-7,10,11 and 14-19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Regarding claim 19, the phrase "(e.g., a first test pattern)" and "(e.g., a second test pattern)" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 2, 12 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Baertsch et al. (U.S. Pub. No. 20030031353).

Baertsch et al. teach a method and system of processing timing information from an electronic device, comprising: generating a first set of responses from the device in response to a first stimulus (sections 0087 and 0117); generating a second set of responses from the device at a second frequency in response to a second stimulus (sections 0087, 0120, 0121, 0124 and 0170-0172); receiving the first and second sets of responses from the device (sections 0152, 0169 and 0173); and processing the received responses to identify responses that are in synchronization with the first stimulus and to identify responses that are in synchronization with the second stimulus (sections 0152, 0169, 0174, 0229 and 0230). The teachings of Baertsch et al. further include: the processing step includes the step of using a single analyzer to measure simultaneously the first and second sets of responses from the electronic device (sections 0460, 0466 and 0467).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baertsch et al. (U.S. Pub. No. 20030031353) in view of Wilsher (U.S. Pub. No. 20030141879).

Baertsch et al. teach a method of processing timing information from an electronic device, comprising the steps of: generating a first set of responses to a first stimulus applied to said electronic device (sections 0087 and 0117); applying a second stimulus to the device to generate a second set of responses (sections 0087, 0120, 0121, 0124 and 0170-0172); receiving the first and second sets of responses from the device (sections 0152, 0169 and 0173); and processing the received responses to separate the responses due to the first stimulus from the responses due to the second stimulus and to identify the responses due to the second stimulus (sections 0152, 0169, 0174, 0229 and 0230).

Baertsch et al. do not mention that: locating the electronic device in a given environment including at least a first environmental factor which acts as the first stimulus; the electronic device is an integrated circuit including a multitude of individual switching circuits; said environmental factor causes at least some of said switching circuit to emit photons; and the timing signal causes at least some of said switching circuits to emit photons.

Wilsher teaches methods and apparatus for timing measurement and calibration of timing measurement, including the step of: locating the electronic device in a given environment including at least a first environmental factor causing the electronic device to generate a first set of responses (Figs. 1 and 3; sections 0016-0018, 0036, 0039, 0051 and 0052). The teaching of Wilsher further includes: the electronic device is an integrated circuit including a multitude of individual switching circuits; said environmental factor causes at least some of said switching circuit to emit photons; and

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the timing signal causes at least some of said switching circuits to emit photons (sections 0035 and 0036).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teaching of Wilsher with the invention of Baertsch in order to provide a PICA probe system and methods for operating and calibrating event timing of such a system (Wilsher, Abstract and section 0017).

#### ***Allowable Subject Matter***

8. Claims 3-7, 10, 11 and 14-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Reasons for Allowance***

9. The following is an examiner's statement of reasons for allowance:

The primary reason for the allowance of claim 3 is the inclusion of the limitation of subtracting from the full data set, a data set representing the first set of responses to obtain a data set representing the second set of responses. It is this limitation found in the claim, as it is claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

The primary reason for the allowance of claim 4 is the inclusion of the limitation of processing step includes the step of processing the received responses to

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synchronize the internal clock signal with the external clock signal. It is this limitation found in the claim, as it is claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

The primary reason for the allowance of claims 5-7 is the inclusion of the following limitations that the second stimulus causes a second group of the switching circuits to switch states in synchronization with the second stimulus; and said second group of switches emit photons when the second group of switches switch states, and/or in varying degrees depending on their state. It is these limitations found in each of the claims, as they are claimed in the combination that have not been found, taught or suggested by the prior art of record, which make these claims allowable over the prior art.

The primary reason for the allowance of claims 10-11 is the inclusion of the limitation of analyzing said electric signal to identify a first component of the electric signal representing photons emitted the switching circuits due to the environmental factor, and to identify a second component of the electric signal representing photons emitted from the switching circuits due to the stimulus. It is this limitation found in each of the claims, as it is claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes these claims allowable over the prior art.

The primary reason for the allowance of claim 14 is the inclusion of the limitation of subtracting from the full data set, a data set representing the first set of responses to obtain a data set representing the second set of responses. It is this limitation found in

the claim, as it is claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

The primary reason for the allowance of claim 15 is the inclusion of the limitations of applying the second stimulus is a clock internal of the electronic device; and processing the received responses to synchronize the internal clock signal with the external clock signal. It is these limitations found in the claim, as they are claimed in the combination that have not been found, taught or suggested by the prior art of record, which make this claim allowable over the prior art.

The primary reason for the allowance of claim 16 is the inclusion of the limitations that the first stimulus causes a first group of the switching circuits to switch states in synchronization with the first stimulus; said first group of switches emit photons when the first group of switches switch states, and/or in varying degrees depending on their state; the second stimulus causes a second group of the switching circuits to switch states in synchronization with the second stimulus; and said second group of switches emit photons when the second group of switches switch states, and /or in varying degrees depending on their state. It is these limitations found in the claim, as they are claimed in the combination that have not been found, taught or suggested by the prior art of record, which make this claim allowable over the prior art.

The primary reason for the allowance of claim 17 is the inclusion of the limitations that the detector includes means for receiving the photons emitted from the first and second groups of switches and for converting the received photons to an electric signal; and the processor includes means for analyzing said electric signal to identify a first



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component of said electric signal representing the photons emitted from the first group of switches and to identify a second component of said electric signal representing the photons emitted from the second group of switches. It is these limitations found in the claim, as they are claimed in the combination that have not been found, taught or suggested by the prior art of record, which make this claim allowable over the prior art.

The primary reason for the allowance of claim 18 is the inclusion of the limitation of subtracting said first component from the electric signal to obtain said second component. It is this limitation found in the claim, as it is claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

The primary reason for the allowance of claim 19 is the inclusion of the limitations that the first stimulus is related to the application of a specific first set of circuit stimuli (e.g., a first test pattern), resulting in a first time varying pattern of photon emissions from some or all circuits on the chip; the second stimulus is related to the application of a specific second set of circuit stimuli (e.g., a second test pattern), resulting in a second time varying pattern of photon emissions from some or all circuits on the chip; and the application of said first and second sets of circuit stimuli optionally being interwoven in any desired fashion. It is these limitations found in the claim, as they are claimed in the combination that have not been found, taught or suggested by the prior art of record, which make this claim allowable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

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accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Prior Art Citations***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- 1) Dajee et al. (U. S. Pub. No. 20030156750) is entitled "PICA system detector calibration".
- 2) Edwards et al. (U. S. Pub. No. 20030056154) is entitled "System and method for communicating with an integrated circuit".
- 3) Kash et al. (U. S. Pub. No. 20030146768) is entitled "Noninvasive optical method and system for inspecting or testing CMOS circuits".

***Contact Information***

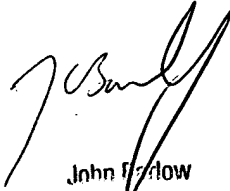
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xiuqin Sun whose telephone number is (571)272-2280. The examiner can normally be reached on 6:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571)272-2269. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Xiuqin Sun  
Examiner  
Art Unit 2863

XS  
January 25, 2005

  
John Morrow  
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